Year Four: Autumn 2

Topic title: E-safety- what happens when I search online?

Data Handling -Investigating weather **And Programming** - further coding with scratch

Skills used: Computer science (CS) Information Technology (IT) Digital Literacy (DL)

Enquiry question: What are Variables?

Prior learning:

- Online safety year 3- e-safety

Future learning:

- How do companies encourage us to buy online? **And** Fact, opinion or belief.- E-safety

E-safety Skills:

Understanding why some results come before others when Searching. (IT)
Understanding that information found by searching the internet is not all grounded in fact. (IT)
Learning to make judgments about the accuracy of online searches. (DL)
Identifying forms of advertising online. (DL)
Reflecting on the positives and negatives of time online. (DL)
Identifying respectful and disrespectful online behaviour. (DL)
Recognising that information on the Internet might not be true or correct and that some sources are more trustworthy than others. (DL)

E-safety Knowledge:

To understand some of the methods used to encourage people to buy things online.
To understand that technology can be designed to act like or impersonate living things.
To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent on technology.
To understand what behaviours are appropriate in order to stay safe and be respectful online.

Knowledge:

Investigating weather-

To know that computers can use different forms of input to sense the world around them so that they can record and respond to data ('sensor data').
To know that a weather machine is an automated machine that responds to sensor data.
To understand that weather forecasters use a specific language, Expression and pre-prepared scripts to help create weather forecasts on film.

Further coding with scratch-

To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch.
To know what a conditional statement is in programming.
To understand that variables can help you to create a quiz on Scratch.

Skills:

Investigating weather-

Using tablets or digital cameras to film a weather forecast. (CS)
Understanding that weather stations use sensors to gather and record data which predicts the weather. (CS)
Using keywords to effectively search for information on the internet. (IT)
Searching the internet for data. (IT)
Recording data in a spreadsheet independently. (IT)
Sorting data in a spreadsheet to compare using the 'sort by...' option. (IT)
Understanding that data is used to forecast weather. (IT)

Further coding with scratch-

Using decomposition to solve a problem by finding out what code was used for. (CS)
Using decomposition to understand the purpose of a script of code (CS)
Creating algorithms for a specific purpose. (CS)
Coding a simple game. (CS)
Incorporating variables to make code more efficient. (CS)
Remixing existing code. (CS)

Critical Content Statements:

E-safety:

AD (advertisement) -Companies pay to have their website at the top of the list of search engine results.
Belief -Something we accept to exist or be true, usually without proof.
Bot - A computer program, sometimes referred to as a chatbot, that can act like a living thing e.g. 'Alexa' or 'Siri'.
Fact - Something that can be proven to be true by evidence.
Opinion - A view or judgement about something.
Influencer- A person who recommends products or services on social media.
Respectful - Being considerate and polite to others, such as treating people kindly with good manners.
Snippets - A short summary.

Investigating weather:

Algorithm -A sequence of instructions which, when followed, solve a problem.
Automated machine -Works without the need for human interaction, after being programmed to carry out a specific job.
Calculate -To use mathematics to discover, prove or solve something.
Climate - The weather conditions you would normally expect in a location.
Device- Equipment created for a certain purpose or job.
Forecast - To predict what might happen or occur as the result of something in the future (for example, weather forecasts).
Log data- A record of information that has been collected by a person or a computer, while monitoring something.
Predict- To make an educated guess, as to what might happen or occur as the result of something in the future.
Record- To log information in the present (for example data during a science experiment), to look back on it in the future.
Sensor -A tool or device that is designed to monitor, detect and respond to changes for a specific purpose, such as a smoke alarm, which will ring if smoke is detected in the air.
Spreadsheet- A file where you can input, sort and analyse data across a series of cells.
Temperature- How hot or cold something is.
Weather-The current condition of the atmosphere around the world, such as the temperature, rain, wind, clouds and sunshine.

Further coding with scratch:

code- A set of instructions written in a programming language to tell a computer what to do.
Code block -Similar to puzzle pieces, they can be dragged, dropped and snapped together to create an algorithm.
Conditional statement -Helps the computer decide what to do next based on the user's response.
Decompose -To break something down into smaller parts.
Direction -How a sprite points or moves, such as up, down, left or right.
Orientation -Which way a sprite is facing**.**
Position - Where a sprite is on the stage.
Tinker- To explore and play with something to discover the key functions.
Variable - A container or holder for storing information

Year Four : Spring 2

Topic title: E-safety- How do companies encourage us to buy online? **And** Fact, opinion or belief.

Computer systems and networks-Collaborative learning

Skills used: Computer science (CS) Information Technology (IT) Digital Literacy (DL)

Enquiry question: What is collaborative learning?

Prior learning:

- Networks
- what happens when I search online? - e-safety

E-safety Skills:

Understanding why some results come before others when Searching. (IT)
Understanding that information found by searching the internet is not all grounded in fact. (IT)
Learning to make judgments about the accuracy of online searches. (DL)
Identifying forms of advertising online. (DL)
Reflecting on the positives and negatives of time online. (DL)
Identifying respectful and disrespectful online behaviour. (DL)
Recognising that information on the Internet might not be true or correct and that some sources are more trustworthy than others. (DL)

E-safety Knowledge:

To understand some of the methods used to encourage people to buy things online.
To understand that technology can be designed to act like or impersonate living things.
To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent on technology.
To understand what behaviours are appropriate in order to stay safe and be respectful online.

Knowledge:

To understand that software can be used collaboratively online to work as a team.
To know what type of comments and suggestions on a collaborative document can be helpful.
To know that you can use images, text, transitions and animation in presentation slides.

Skills:

Understanding that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration. (CS)
Use online software for documents, presentations, forms and spreadsheets. (IT)
Using software to work collaboratively with others. (IT)
Understanding that software can be used collaboratively online to work as a team. (IT)
Recognising what appropriate behaviour is when collaborating with others online. (DL)

Critical Content Statements:

E-safety:

AD (advertisement) -Companies pay to have their website at the top of the list of search engine results.
Belief -Something we accept to exist or be true, usually without proof.
Bot - A computer program, sometimes referred to as a chatbot, that can act like a living thing e.g. 'Alexa' or 'Siri'.
Fact - Something that can be proven to be true by evidence.
Opinion - A view or judgement about something.
Influencer- A person who recommends products or services on social media.
Respectful - Being considerate and polite to others, such as treating people kindly with good manners.
Snippets - A short summary

Collaborative learning-

Collaborative - Working with others to achieve a specific goal.
Comment - Verbal feedback or notes to express an opinion on something.
Edit - To change and amend something.
Presentation - A slide show that is used to display information.
Spreadsheet - A file where you can input, sort and analyse data across a series of cells. Formula can be written to output mathematical solutions from the data.
Share - To show or give a part of something to someone else.
Reviewing comments - Looking at comments written by others on a document to help the collaborative process.

Year four: Summer 2

Topic title: E-safety - What is a bot? **And** what is my tech timetable like?

programming - computational thinking

Skills used: Computer science (CS) Information Technology (IT) Digital Literacy (DL)

Enquiry question: What is computational Thinking?

Prior learning:

- Algorithms and debugging
- How do companies encourage us to buy online? **And** Fact, opinion or belief. - Esafety

E-safety Skills:

Understanding why some results come before others when searching. (IT)
Understanding that information found by searching the internet is not all grounded in fact. (IT)
Learning to make judgments about the accuracy of online searches. (DL)
Identifying forms of advertising online. (DL)
Reflecting on the positives and negatives of time online. (DL)
Identifying respectful and disrespectful online behaviour. (DL)
Recognising that information on the Internet might not be true or correct and that some sources are more trustworthy than others. (DL)

E-safety Knowledge:

To understand some of the methods used to encourage people to buy things online.
To understand that technology can be designed to act like or impersonate living things.
To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent on technology.
To understand what behaviours are appropriate in order to stay safe and be respectful online.

Knowledge:

To know that combining computational thinking skills can help you to solve a problem.
To understand that pattern recognition means identifying patterns to help them work out how the code works.
To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.

Skills:

Using decomposition to solve a problem by finding out what code was used. (CS)
Using decomposition to understand the purpose of a script of code. (CS)
Identifying patterns through unplugged activities. (CS)
Using past experiences to help solve new problems. (CS)
Using abstraction to identify the important parts when completing both plugged and unplugged activities. (CS)
Creating algorithms for a specific purpose. (CS)
Using abstraction and pattern recognition to modify code. (CS)

Critical Content Statements:

E-safety:

AD (advertisement) -Companies pay to have their website at the top of the list of search engine results.
Belief -Something we accept to exist or be true, usually without proof.
Bot - A computer program, sometimes referred to as a chatbot, that can act like a living thing e.g. 'Alexa' or 'Siri'.

Computational thinking:

Abstraction - Identifying the important details and ignoring irrelevant information.
Algorithm Design - Creating a formula or set of instructions to solve the problem.
Code Blocks - A visual representation for a section of code that performs a certain job. They can be snapped together to build a program.
Pattern Recognition - Identifying similarities and recurrences in data.

Fact - Something that can be proven to be true by evidence. **Opinion** - A view or judgement about something. **Influencer**- A person who recommends products or services on social media. **Respectful** - Being considerate and polite to others, such as treating people kindly with good manners. **Snippets** - A short summary	**Decompose** - To break something down into smaller chunks. **Code (computer)** - A set of instructions written in programming language, to tell a computer what to do. **Sequence** - A set order or pattern for something to follow.